

Claims

I claim:

1. A projector apparatus, comprising:
a color wheel, said color wheel having a rotation center and including multiple filter devices, wherein at least one said filter device includes a first filter and a white filter connected to said first filter, a boundary arc is defined at the connection of said first filter and said white filter, said boundary arc has a center of curvature near said rotation center; and
a lamp for generating a light beam;
wherein as said color wheel is rotated, said light beam projects into each said first filter, said white filter, and said boundary arc selectively to filter said light beam.
2. The projector apparatus of claim 1, wherein ratio of the area of said first filter to the area of said white filter for each filter device is predetermined, and ratios among the filter devices are selectively the same.
3. The projector apparatus of claim 1, wherein said light beam is filtered to become a first color light of a first brightness as said light beam passes said first filter, and said light beam is filtered to become said first color light of a second brightness as said light beam passes said white filter and said boundary arc, wherein color of said first color light is non-white, said first brightness is smaller than said second brightness.
4. The projector apparatus of claim 1, further comprising a driving device for selectively driving said color wheel to rotate, to radially move, and to axially move.

5. The projector apparatus of claim 4, wherein when said color wheel is a disk-type color wheel, said color wheel moves radially for selectively allowing said light beam to project into said first filter, said white filter, and said boundary arc, and wherein when said color wheel is a barrel-type color wheel, said color wheel moves axially for selectively allowing said light beam to project into said first filter, said white filter, and said boundary arc.
6. The projector apparatus of claim 1, comprising a digital micro-mirror projector device.
7. The projector apparatus of claim 1, comprising a liquid-crystal-on-silicon device.
8. A projector apparatus, comprising:
a color wheel, said color wheel having a rotation center and including multiple filter devices, wherein at least one said filter device includes a first filter and a white filter connected to said first filter, a boundary arc is defined at the connection of said first filter and said white filter, said boundary arc has a center of curvature near said rotation center, wherein a ratio of the area of said first filter to the area of said white filter for each filter device is predetermined, and ratios among the filter devices are selectively the same;
and
a lamp for generating a light beam;

wherein as said color wheel is rotated, said light beam projects into each said first filter, said white filter, and said boundary arc selectively to filter said light beam.

9. The projector apparatus of claim 8, said light beam is filtered to become a first color light of a first brightness as said light beam passes said first filter, and said light beam is filtered to become said first color light of a second brightness as said light beam passes said white filter and said boundary arc, wherein the color of said first color light is non-white and said first brightness is smaller than said second brightness.
10. The projector apparatus of claim 8, further comprising a driving device for selectively driving said color wheel to rotate, to radially move, and to axially move.
11. The projector apparatus of claim 10, as said color wheel is a disk-type color wheel, said color wheel moves radially for selectively allowing said light beam to project into said first filter, said white filter, and said boundary arc, and as said color wheel is a barrel-type color wheel, said color wheel moves axially for selectively allowing said light beam to project into said first filter, said white filter, and said boundary arc.
12. The projector apparatus of claim 8, comprising a digital micro-mirror projector device.
13. The projector apparatus of claim 8, comprising a liquid-crystal-on-silicon device.

14. A digital micro-mirror projector device, comprising:
- a color wheel, said color wheel having a rotation center and including multiple filter devices, wherein at least one said filter device includes a first filter and a white filter connected to said first filter, a boundary arc is defined at the connection of said first filter and said white filter, said boundary arc has a center of curvature near said rotation center, wherein a ratio of the area of said first filter to the area of said white filter for each filter device is predetermined, and ratios among the filter devices are selectively the same; and
- a lamp for generating a light beam;
- wherein as said color wheel is rotated, said light beam projects into each said first filter, said white filter, and said boundary arc selectively to filter said light beam, said light beam is filtered to become a first color light of a first brightness as said light beam passes said first filter, and said light beam is filtered to become said first color light of a second brightness as said light beam passes said white filter and said boundary arc, wherein the color of said first color light is non-white and said first brightness is smaller than said second brightness.
15. The digital micro-mirror projector device of claim 14, further comprising a driving device for selectively driving said color wheel to rotate, to radially move, and to axially move.
16. The digital micro-mirror projector device of claim 15, wherein when said color wheel is a disk-type color wheel, said color wheel moves radially for selectively allowing

said light beam to project into said first filter, said white filter, and said boundary arc, and when said color wheel is a barrel-type color wheel, said color wheel moves axially for selectively allowing said light beam to project into said first filter, said white filter, and said boundary arc.